



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<b>(21) International Application Number:</b> PCT/US99/24972 <b>(22) International Filing Date:</b> 23 October 1999 (23.10.99) <b>(30) Priority Data:</b> 60/105,330      23 October 1998 (23.10.98)      US <b>(71) Applicant (for all designated States except US):</b> UNIVERSITY OF VIRGINIA PATENT FOUNDATION [US/US]; Suite 1-110, 1224 West Main Street, Charlottesville, VA 22903 (US). <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> OWENS, Gary, K. [US/US]; P.O. Box 472, Earlysville, VA 22936 (US). MACK, Christopher [US/US]; 3037 Colonial Drive, Charlottesville, VA 22911 (US). BLANK, Randall [US/US]; 3385 Martin Kings Road, Charlottesville, VA 22902 (US). <b>(74) Agents:</b> BALDWIN, Geraldine, F. et al.; Pennie & Edmonds LLP, 1155 Avenue of the Americas, New York, NY 10036 (US).		<b>(81) Designated States:</b> AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
<b>(54) Title:</b> COMPOSITIONS AND METHODS FOR MODULATING EXPRESSION WITHIN SMOOTH MUSCLE CELLS		
<b>(57) Abstract</b>  <p>The present invention relates to promoters, enhancers and other regulatory elements that direct expression within SMC, comprising nucleotide sequences from the 5' regulatory region and the first intron, and transcriptionally active fragments thereof, that control expression of an SM <math>\alpha</math>-A. Specifically provided are expression vectors, host cells and transgenic animals wherein an SM <math>\alpha</math>-A regulatory region is capable of controlling expression of a heterologous gene, over-expressing an endogenous SMC gene or an inhibitor of a pathological process or knocking out expression of a specific gene believed to be important for an SM-related disease in SMC. The invention also relates to methods for using said vectors, cells and animals for screening candidate molecules for agonists and antagonists of disorders involving SMC. The invention further relates to compositions and methods for modulating expression of compounds within SMC, and to screening compounds that modulate expression within SMC. Methods for using the molecules and compounds identified by the screening assays for therapeutic treatments also are provided.</p>		